

# (12) United States Patent Han et al.

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### (54) BIOMETRIC INITIATED COMMUNICATION

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CPC ....... G06F 3/0414 (2013.01); G06F 3/0488 (2013.01); H04M 1/72541 (2013.01); H04M 1/67 (2013.01); H04M 2250/22 (2013.01)

Field of Classification Search

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See application file for complete search history.

#### (56)References Cited

### U.S. PATENT DOCUMENTS

6,323,846 B1 11/2001 Westerman et al. 6,570,557 B1 5/2003 Westerman et al. 6,677,932 B1 1/2004 Westerman (Continued)

# FOREIGN PATENT DOCUMENTS

CN 102461133 5/2012 EP 2226741 9/2010 (Continued)

# OTHER PUBLICATIONS

International Search Report and Written Opinion dated Oct. 24, 2013, PCT/US2013/047830, 11 pages.

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#### (57)ABSTRACT

A device has a touch processing module that processes touch screen input to determine if the manner in which the input was entered indicates that the user intends for execution of a particular command. In one embodiment, the module may acquire fingerprint data from the user's input and analyze the data to determine if the input was entered with a particular finger or finger sequence. In another embodiment, the module may also acquire timing data from the user's entry of a plurality of inputs and analyze the timing data to determine if the touch screen input was entered with a particular timing or cadence. In still another embodiment, the module may also acquire force data from the user's entry of a plurality of touch screen inputs and analyze the force data to determine to determine if the touch screen input was entered with a particular force.

# 19 Claims, 5 Drawing Sheets

